

FIG. 1A

gggcaggaagacggcgctgcccggaggagc	-153
ggggcgggcgggcgcgcgggggagcgggcgggcgggcgggagccagggcgggcgggcgggcgggcgggccag	-77
aagaggcgggcgggcgcgctccggcggtctgcggcgttgcccttggtttggtttggcgggcgggcggtggagaag	-1
ATG CTG CAG TCC CTG GCC GGC AGC TCG TGC GTG CGC CTG GTG GAG CGG CAC CGC TCG	57
M L Q S L A G S S C V R L V E R H R S	19
GCC TGG TGC TTC GGC TTC CTG GTG CTG GGC TAC TTG CTC TAC CTG GTC TTC GGC GCA	114
A W C F G F L V L G Y L L Y L V F G A	38
GTG GTC TTC TCC TCG GTG GAG CTG CCC TAT GAG GAC CTG CTG CGC CAG GAG CTG CGC	171
V V F S S V E L P Y E D L L R Q E L R	57
AAG CTG AAG CGA CGC TTC TTG GAG GAG CAC GAG TGC CTG TCT GAG CAG CAG CTG GAG	228
K L K R R F L E E H E C L S E Q Q L E	76
CAG TTC CTG GGC CGG GTG CTG GAG GCC AGC AAC TAC GGC GTG TCG GTG CTC AGC AAC	285
Q F L G R V L E A S N Y G V S V L S N	95
GCC TCG GGC AAC TGG AAC TGG GAC TTC ACC TCC GCG CTC TTC TTC GCC AGC ACC GTG	342
A S G N W N W D F T S A L F F A S T V	114
CTC TCC ACC ACA GGT TAT GGC CAC ACC GTG CCC TTG TCA GAT GGA GGT AAG GCC TTC	399
L S T T G Y G H T V P L S D G G K A F	133
TGC ATC ATC TAC TCC GTC ATT GGC ATT CCC TTC ACC CTC CTG TTC CTG ACG GCT GTG	456
C I I Y S V I G I P F T L L F L T A V	152
GTC CAG CGC ATC ACC GTG CAC GTC ACC CGC AGG CCG GTC CTC TAC TTC CAC ATC CGC	513
V Q R I T V H V T R R P V L Y F H I R	171
TGG GGC TTC TCC AAG CAG GTG GTG GCC ATC GTC CAT GCC GTG CTC CTT GGG TTT GTG	570
W G F S K Q V V A I V H A V L L G F V	190
ACT GTG TCC TGC TTC TTC TTC ATC CCG GCC GCT GTC TTC TCA GTC CTG GAG GAT GAC	627
T V S C F F F I P A A V F S V L E D D	209

FIG. 1B-1

TGG AAC TTC CTG GAA TCC TTT TAT TTT TGT TTT ATT TCC CTG AGC ACC ATT GGC CTG	684
W N F L E S F Y F C F I S L S T I G L	228
GGG GAT TAT GTG CCT GGG GAA GGC TAC AAT CAA AAA TTC AGA GAG CTC TAT AAG ATT	741
G D Y V P G E G Y N Q K F R E L Y K I	247
GGG ATC ACG TGT TAC CTG CTA CTT GGC CTT ATT GCC ATG TTG GTA GTT CTG GAA ACC	798
G I T C Y L L L G L I A M L V V L E T	266
TTC TGT GAA CTC CAT GAG CTG AAA AAA TTC AGA AAA ATG TTC TAT GTG AAG AAG GAC	855
F C E L H E L K K F R K M F Y V K K D	285
AAG GAC GAG GAT CAG GTG CAC ATC ATA GAG CAT GAC CAA CTG TCC TTC TCC TCG ATC	912
K D E D Q V H I I E H D Q L S F S S I	304
ACA GAC CAG GCA GCT GGC ATG AAA GAG GAC CAG AAG CAA AAT GAG CCT TTT GTG GCC	969
T D Q A A G M K E D Q K Q N E P F V A	323
ACC CAG TCA TCT GCC TGC GTG GAT GGC CCT GCA AAC CAT TGA gcgtaggatttgttgcatt	1030
T Q S S A C V D G P A N H *	337
atgctagagcaccaggggtcaggggtgcaaggaagaggttaagtatgttcattttttatcagaatgcaaaagcgaaaa	1106
ttatgtcactttaagaaatagctactgtttgcaatgtcttattaaaaaacaacaaaaaagacacatggaacaaag	1182
aagctgtgacccagcaggatgtctaataatgtgaggaaatgagatgtccacctaaaattcatatgtgacaaaatta	1258
tctcgaccttacataggaggagaatacttgaagcagtatgctgctgtggttagaagcagattttatacttttaact	1334
ggaaactttgggggttgcatatagatcatttagctgatggctaaatagcaaaatttatatttagaagcaaaaaaa	1410
aaagcatagagatgtgtttataaatagggttatgtgtactggtttgcatgtaccaccccaaatgattattttg	1486
gagaatctaagtcacaaactcactatttataatgcataggtaaccattaactatgtacatataaagtataaatatgtt	1562
tatattctgtacatatggtttaggtcaccagatcctagtgtagttctgaaactaagactatagatattttgtttct	1638
tttgatttctctttataactaaagaatccagagttgctacaataaaataaggggaataataaaaaaaaaaaaaa	1712

FIG. 1B-2

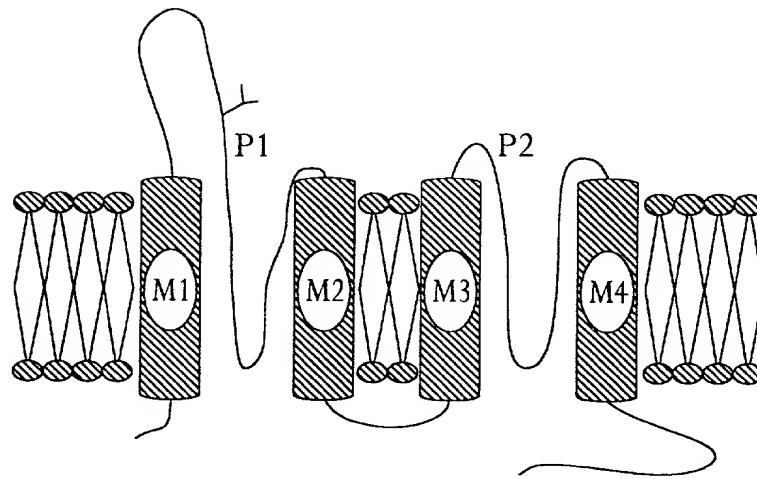
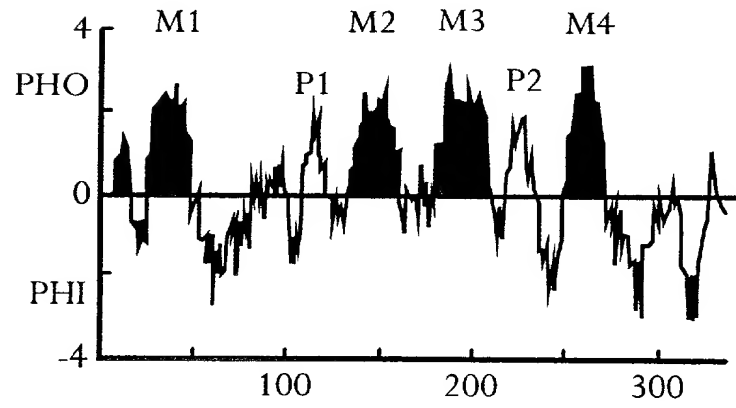


FIG. 1C

	1	14	27
TWIK-1 P1	FTSALEFFASTVLSTTGYGHTVPLSDGG		
TWIK-1 P2	ELESFYFCFLSLSTTGLCDYVPGEYN		
TOK1 P2	YFNCIYFCFLCLLTGTYGDIAPRTGAG		
TOK1 P1	YGNALYECTVSLLTVGLGDTLPKSVGA		
Slo	YWTICVYFLIVTMSTVGYGDVYCETVLG		
Shaker	IPDAFWWAVVTMTTVGYGDMTPVGFWG		
Shab	IPEAFWWAGITMTTVGYGDIPTTALG		
Shal	IPAAFWYTIIVTMTTLGYGDMVPEITAG		
Shaw	IPLGLWVALVTMTTVGYGDMAPKTYIG		
KAT1	YVTALYWSITTLTTTGYGDFHAENPRE		
AKT1	YVTSMYWSITTLTTVGYGDIHPVNTKE		
eag	YVTALYFTMTOMTSVGEFGNVAAETDNE		
ROMK1	MTSAFLFSLETQVTGTYGFRFVTEQCA		
IRK1	ETAALFLFSIETOTTGTYGFRCVTDECP		
GIRK1	EPSAFLFFLETEATGTYGYRYITDKCP		

FIG. 2A

FIG. 2B

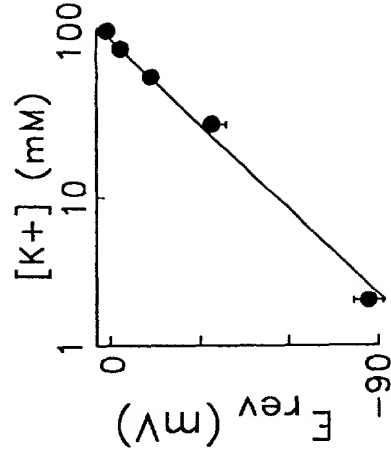


FIG. 3C

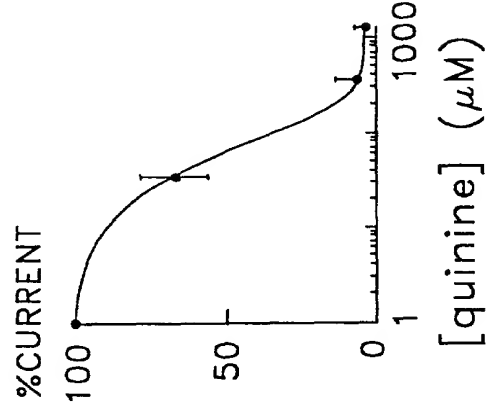


FIG. 3F

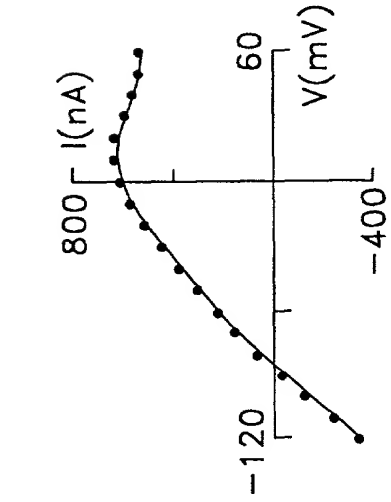


FIG. 3B

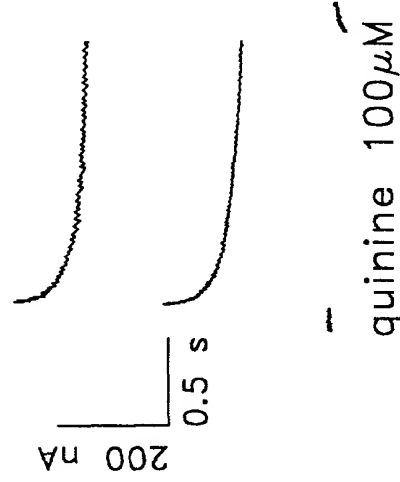


FIG. 3E

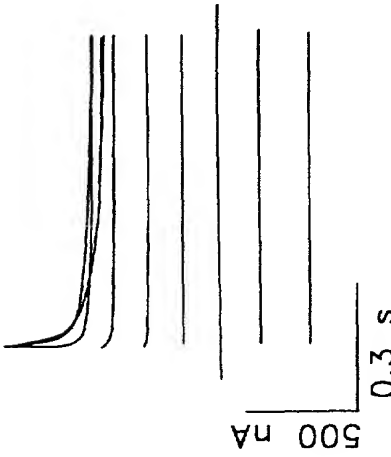


FIG. 3A

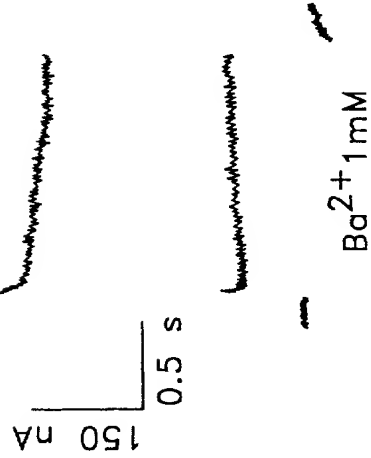


FIG. 3D

FIG. 4A

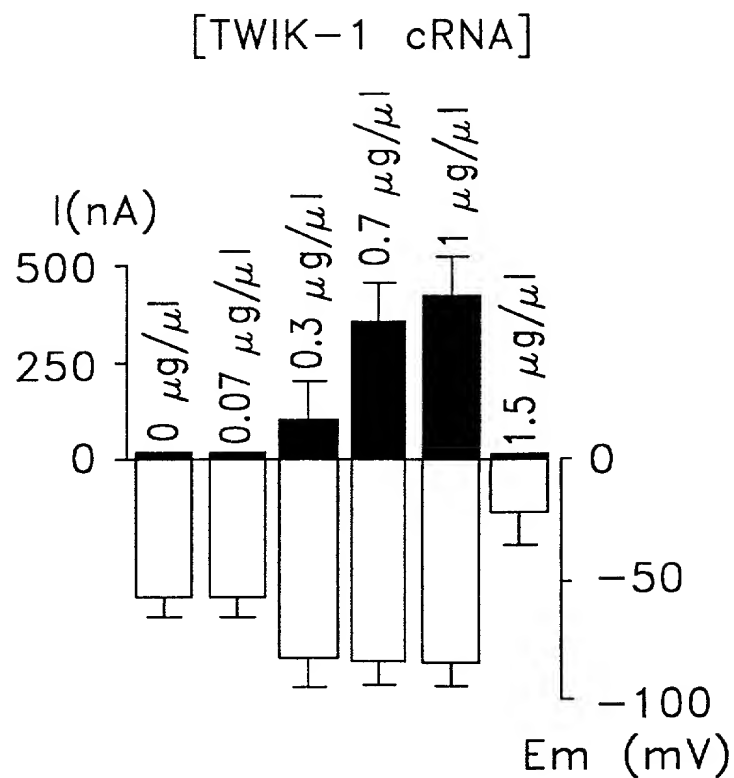


FIG. 4B

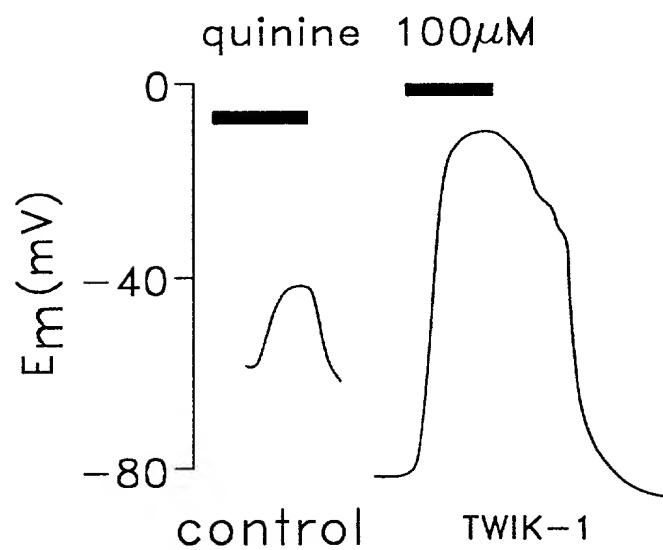
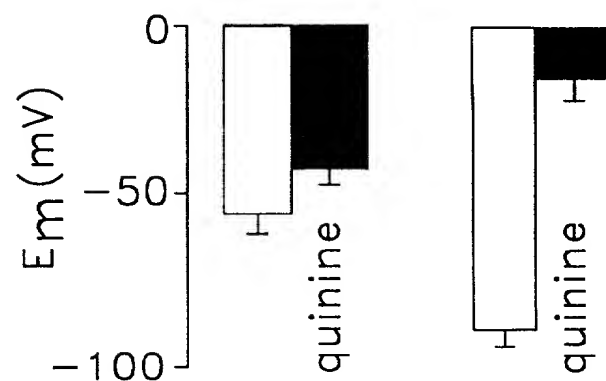


FIG. 4C





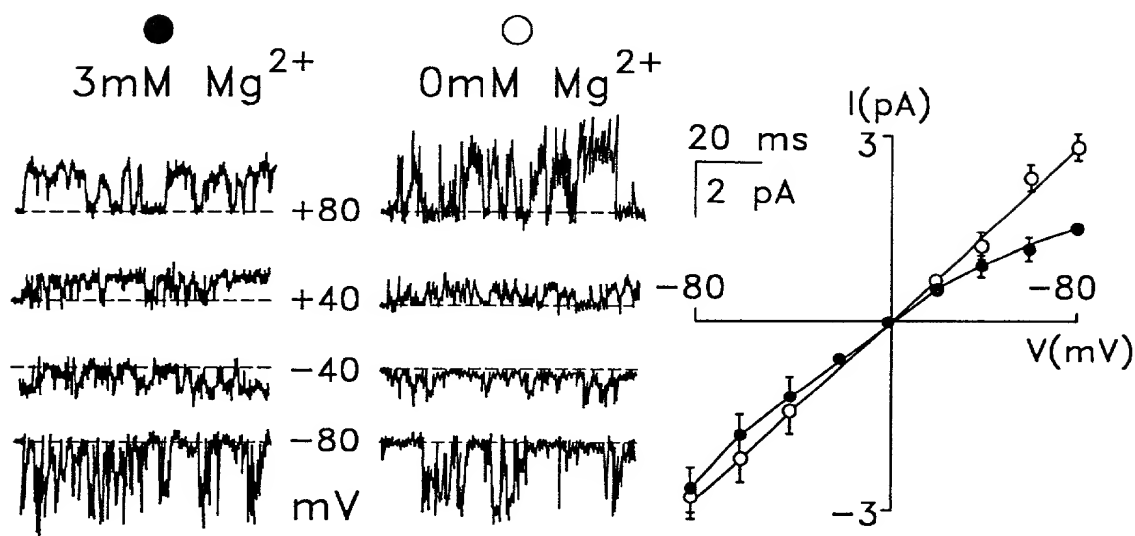


FIG. 5A

FIG. 5B

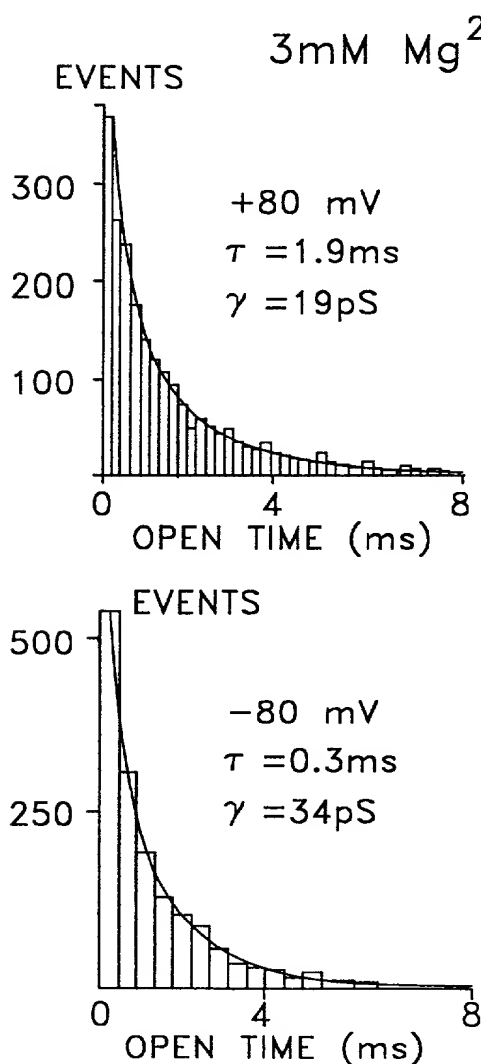


FIG. 5C

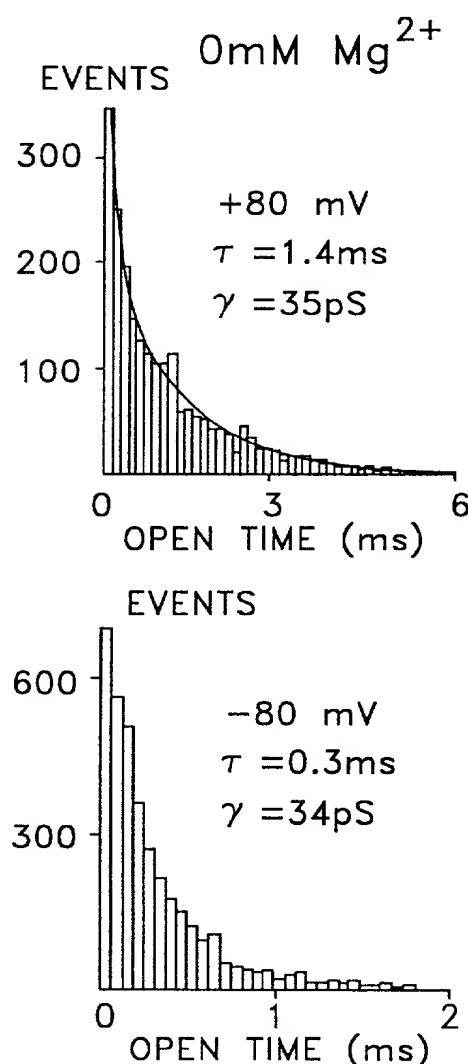


FIG. 5D

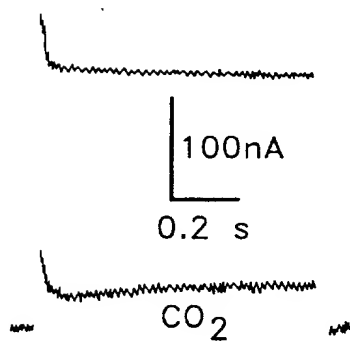


FIG. 6A

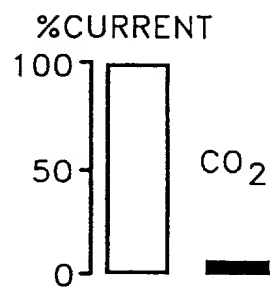


FIG. 6B

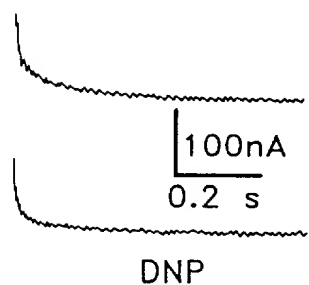


FIG. 6C

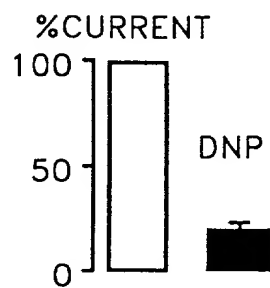


FIG. 6D

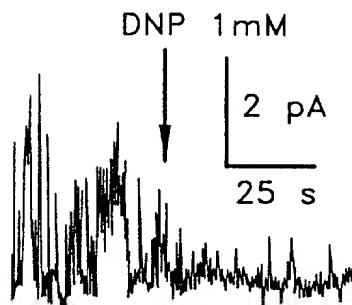


FIG. 6E

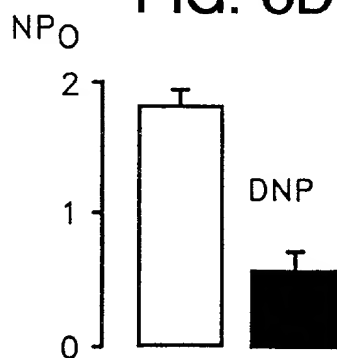


FIG. 6F

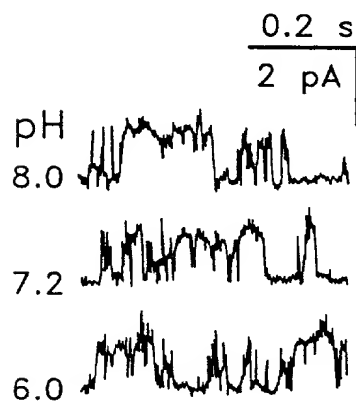


FIG. 6G

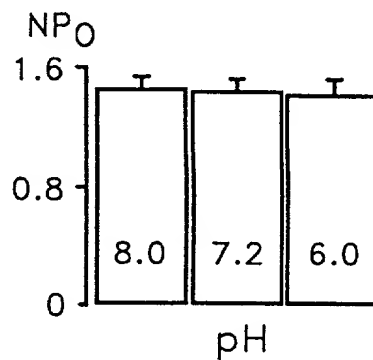


FIG. 6H

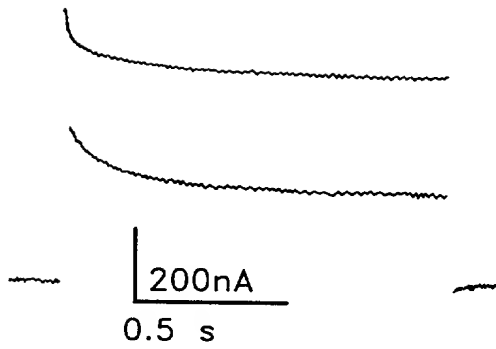


FIG. 7A

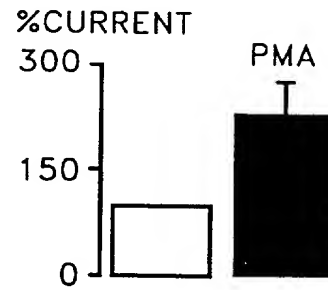


FIG. 7B

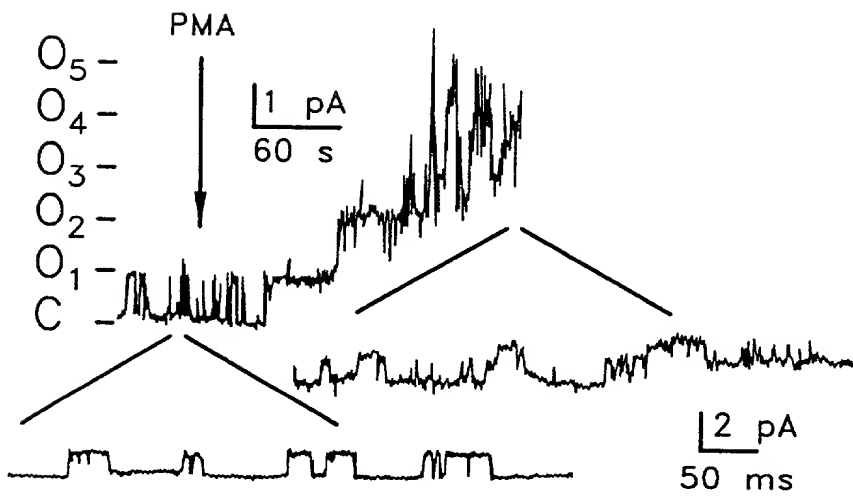


FIG. 7C

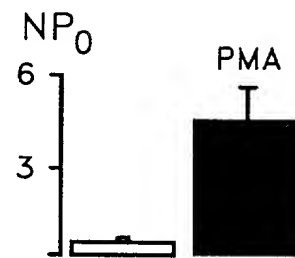


FIG. 7D

```

                                tgccctgcgcggatagcggcgagcgcagccatgccccagggcgctccg -77
gggcagcagcagcggcgggcgggggccgatgcgcggggcgggggcgccggggggcgggcgggcgcccgggcgggacg -1

ATG AAG CGG CAG AAC GTG CGC ACG CTG GCG CTC ATC GTG TGC ACC TTC ACC TAC CTG 57
M  K  R  Q  N  V  R  T  L  A  L  I  V  C  T  F  T  Y  L 19
      E  N  V  R  T  L  A  L  I  V  C  T  F  T  Y  L

CTG GTG GGC GCC GCG GTC TTC GAC GCG CTG GAG TCG GAG CCC GAG CTG ATC GAG CGG 114
L  V  G  A  A  V  F  D  A  L  E  S  E  P  E  L  I  E  R 38
L  V  G  A  A  V  F  D  A  L  E  S  E  P  E  M  I  E  R

CAG CGG CTG GAG CTG CGG CAG CAG GAG CTG CGG GCG CGC TAC AAC CTC AGC CAG GGC 171
Q  R  L  E  L  R  Q  Q  E  L  R  A  R  Y  N  L  S  Q  G 57
Q  R  L  E  L  R  Q  L  E  L  R  A  R  Y  N  L  S  E  G
                                     *

GGC TAC GAG GAG CTG GAG CGC GTC GTG CTG GCG CTC AAG CCG CAC AAG GCC GGC GTG 228
G  Y  E  E  L  E  R  V  V  L  R  L  K  P  H  K  A  G  V 76
G  Y  E  E  L  E  R  V  V  L  R  L  K  P  H  K  A  G  V

CAG TGG CGC TTC GCC GGC TCC TTC TAC TTC GCC ATC ACC GTC ATC ACC ACC ATC GGC 285
Q  W  R  F  A  G  S  F  Y  F  A  I  T  V  I  T  T  I  G 95
Q  W  R  F  A  G  S  F  Y  F  A  I  T  V  I  T  T  I  G

TAC GGG CAC GCG GCA CCC AGC ACG GAT GGC GGC AAG GTG TTC TGC ATG TTC TAC GCG 342
Y  G  H  A  A  P  S  T  D  G  G  K  V  F  C  M  F  Y  A 114
Y  G  H  A  A  P  S  T  D  G  G  K  V  F  C  M  F  Y  A

CTG CTG GGC ATC CCG CTC ACG CTC GTC ATG TTC CAG AGC CTG GGC GAG CGC ATC AAC 399
L  L  G  I  P  L  T  L  V  M  F  Q  S  L  G  E  R  I  N 133
L  L  G  I  P  L  T  L  I  M  F  Q  S  L  G  E  R  I  N

ACC TTG GTG AGG TAC CTG CTG CAC CGC GCC AAG AAG GGG CTG GGC ATG CGG CGC GCC 456
T  L  V  R  Y  L  L  H  R  A  K  K  G  L  G  M  R  R  A 152
T  E  V  R  Y  L  L  H  R  A  K  R  G  L  G  M  R  H  A

GAC GTG TCC ATG GCC AAC ATG GTG CTC ATC GGC TTC TTC TCG TGC ATC AGC ACG CTG 513
D  V  S  M  A  N  M  V  L  I  G  F  F  S  C  I  S  T  L 171
E  V  S  M  A  N  M  V  L  I  G  F  V  S  C  I  S  T  L

TGC ATC GGC GCC GCC GCC TTC TCC CAC TAC GAG CAC TGG ACC TTC TTC CAG GCC TAC 570
C  I  G  A  A  A  F  S  H  Y  E  H  W  T  F  F  Q  A  Y 190
C  I  G  A  A  A  F  S  Y  Y  E  R  W  T  F  F  Q  A  Y

TAC TAC TGC TTC ATC ACC CTC ACC ACC ATC GGC TTC GGC GAC TAC GTG GCG CTG CAG 627
Y  Y  C  F  I  T  L  T  T  I  G  F  G  D  Y  V  A  L  Q 209
Y  Y  C  F  I  T  L  T  T  I  G  F  G  D  Y  V  A  L  Q

AAG GAC CAG GCC CTG CAG ACG CAG CCG CAG TAC GTG GCC TTC AGC TTC GTC TAC ATC 684
K  D  Q  A  L  Q  T  Q  P  Q  Y  V  A  F  S  F  V  Y  I 228
K  D  Q  A  L  Q  T  Q  P  Q  Y  V  A  F  S  F  V  Y  I

CTT ACG GGC CTC ACG GTC ATC GGC GCC TTC CTC AAC CTC GTG GTG CTG CGC TTC ATG 741
L  T  G  L  T  V  I  G  A  F  L  N  L  V  V  L  R  F  M 247
L  T  G  L  T  V  I  G  A  F  L  N  L  V  V  L  R  F  M
  
```

FIG. 8A

ACC	ATG	AAC	GCC	GAG	GAC	GAG	AAG	CGC	GAC	GCC	GAG	CAC	CGC	GCG	CTG	CTC	ACG	CGC	798
T	M	N	A	E	D	E	K	R	D	A	E	H	R	A	L	L	T	R	266
T	M	N	A	E	D	E	K	R	D	A	E	H	R	A	L	L	T	H	
AAC	GGG	CAG	GCG	GGC	GGC	GGC	GGA	GGG	GGT	GGC	AGC	GCG	CAC	ACT	ACG	GAC	ACC	GCC	855
N	G	Q	A	G	G	G	G	G	G	G	S	A	H	T	T	D	T	A	285
N	G	Q	A	V	G	L	G	G	L	S	C	L	S	G	S	L	G	D	
TCA	TCC	ACG	GCG	GCA	GCG	GGC	GGC	GGC	GGC	TTC	CGC	AAC	GTC	TAC	GCG	GAG	GTG	CTG	912
S	S	T	A	A	A	G	G	G	G	F	R	N	V	Y	A	E	V	L	304
<u>VRPRDPV</u>	<u>TC</u>	<u>AA</u>	<u>A</u>	<u>A</u>	<u>G</u>	<u>G</u>	<u>V</u>	<u>G</u>	<u>V</u>	<u>G</u>	<u>V</u>	<u>G</u>	<u>G</u>	<u>S</u>	<u>G</u>	<u>S</u>	<u>L</u>	<u>G</u>	
CAC	TTC	CAG	TCC	ATG	TGC	TCG	TGC	CTG	TGG	TAC	AAG	AGC	CGC	GAG	AAG	CTG	CAG	TAC	969
H	F	Q	S	M	C	S	C	L	W	Y	K	S	R	E	K	L	Q	Y	323
H	F	Q	S	M	C	S	C	L	W	Y	K	S	R	E	K	L	Q	Y	
TCC	ATC	CCC	ATG	ATC	ATC	CCG	CGG	GAC	CTC	TCC	ACG	TCC	GAC	ACG	TGC	GTG	GAG	CAG	1026
S	I	P	M	I	I	P	R	D	L	S	T	S	D	T	C	V	E	Q	342
S	I	P	M	I	I	P	R	D	L	S	T	S	D	T	C	V	E	H	
AGC	CAC	TCG	TCG	CCG	GGA	GGG	GGC	GGC	CGC	TAC	AGC	GAC	ACG	CCC	TCG	CGA	CGC	TGC	1083
S	H	S	S	P	G	G	G	G	R	Y	S	D	T	P	S	R	R	C	361
S	H	S	S	P	G	G	G	G	R	Y	S	D	T	P	S	H	P	C	
CTG	TGC	AGC	GGG	GCG	CCA	CGC	TCC	GCC	ATC	AGC	TCG	GTG	TCC	ACG	GGT	CTG	CAC	AGC	1140
L	C	S	G	A	P	R	S	A	I	S	S	V	S	T	G	L	H	S	380
L	C	S	G	T	Q	R	S	A	I	S	S	V	S	T	G	L	H	S	
CTG	TCC	ACC	TTC	CGC	GGC	CTC	ATG	AAG	CGC	AGG	AGC	TCC	GTG	TGA	ctgccccgaggggacc				1200
L	S	T	F	R	G	L	M	K	R	R	S	S	V	*					395
L	A	A	F	R	G	L	M	K	R	R	S	S	V						
tggagcacctggggg	cgcgggg	cgggg	ggggg	gacccct	gctggg	gaggg	caggag	actgcccct	gctgcctt	tgtcccagtg									1276
ggaccccg	cacaacat	cctcacc	actctcccc	cagc	accccc	actcctcg	actgtgcct	gcttgacc	agccggca										1352
ggaggccggg	ctctgagg	acccctgg	ggggcccc	atcg	gagccctg	caaattcc	gagaaatg	gaaactt	gggtggg										1428
tcaggagg	aaaagga	agctggg	agcctccc	cttccct	ttgaaa	atctaaga	agctccc	agtcctc	agagacc										1504
gctggtacc	acaccccc	accttcgg	aggggact	tcatgt	tccgtgt	acgtttg	catctct	tattata	acctctg										1580
gctaggtct	ccccacett	cccttgg	ttccaaa	agccagg	gtgtctat	gtccaag	tacccct	actcag	ccccact										1656
ccttcctcat	ccccagct	gtgtctcc	caacctcc	cttcgt	gtgtttt	gcatgg	ctttg	cagttat	ggagaa										1732
gaaaccag	cagtcctc	taagctg	gttcccc	agaaag	caggac	agaaaga	aggaggg	acaggc	aggcagg										1808
gcgagctg	gggaggg	caggagc	gggcctgt	cagctct	gcagaat	ggctgc	actggag	gttcaag	ctaactg										1884
cagccacat	tctcatag	caggtagg	acttcagc	cttcag	acactg	cccttag	aatctg	gaacaga	agacttc										1960
ctcaccata	aattgctg	ataattac	ccactctt	aaattt	gtcgagt	gattttt	tagcctc	tgaactc	tatgctg										2036
cactgattc	cttttgag	tctcaca	aaacctac	tttaggt	catcagg	gcaggag	ttctcact	cccattt	acagatg										2112
gaatactg	aggcctg	gacaggt	gaagtga	ccagag	agcaaa	aggcaaa	gggtggg	ggctggg	tcagtg										2188
acctgtat	tcccaac	actttt	ggaggct	gaggtt	ggaggat	tgttga	gcccagg	aattcg	agaccag										2264
acatagtg	agaccccc	atctctc	aaaaaa	ataaaaa	ataaacc	aggtgtg	gtggcac	gtgctgg	ggagtcc										2340
cttgggag	ggctgag	gtggagg	attgttt	gagcct	gggaggt	cagggtg	tagtgag	ccctgatt	gcaccact										2416
ctccagc	cctgggtg	acagggc	aagacctg	ctc	aaaaaaaa														2465

FIG. 8B

	1	-----MLQSLAGSSCVR-----LVERHRS---
	1	MAAPDILDPKSAQAQNSKPRLSFSSKPTVLA SRVESDSA
	1	-----MKR-----Q-NVR-----
		M1
TWIK-1	20	----AWCFG-PLVLGYLLYLVFAGVVFSSVELPVEDLL
TREK-1	39	INVMKWKTVSTIFLVVVLVYLITGAAVFKALEQPEISQ
TASK	8	-----TLALLVCTFTYLLLVGA AVF DALESEPELIE
		P1
TWIK-1	53	RQBLRKLKRRFLEEHECLSEQOLEQFLGRVLEASNYGV
TREK-1	77	RTTIVIQKQTEFLAQHACVNSTELDELQQIVAAINAGT
TASK	38	RQRLERQQELR ARYNLSQGG-YEELERVVLRLKPKHA
		P1
TWIK-1	91	SVLSNASG-NWNWDFTSALFFASTVLESTGYGHTVPLS
TREK-1	115	IPLGNSSNQVSHWDLGSSFFFACTVITTIGEGNISPT
TASK	75	G-----VQ-WREAGSFVFAITVITTIGYGHAA PST
		M2
TWIK-1	128	DGGKAFCIISVIGIPETLLFLTAVVORITVHVTR--R
TREK-1	153	EGGKIFCIYALLGIPLGGLLAGVGDOLGTIFGKGIA
TASK	104	DGGKFCMAYALLGIPLTLVMFOSLGERINTLVRY---
		M3
TWIK-1	164	PVLYFHIRVGFESKQVVAIVHAVLLGFVTVSCFFIPAA
TREK-1	191	KVEDDFIKVNVSTQTKIRIISTITIFILFGCVLEVALPAV
TASK	139	LHRAKKGIGMRRADVSMANMVLIGFFSCISTLCIGAA
		P2
TWIK-1	202	VFSVLEDDVNFLESYFCFISLSTIGLGDYVGE-GYN
TREK-1	229	IFKHIEG-NSALDAIYFAVITLTTIGFGDYVAG--GSD
TASK	177	AFSHYEH-WTFPOAVYVCFITLTTIGFGDYVALQKDQA
		M4
TWIK-1	239	QKFRREYKIGITCYLLGLIAMLVLEETFCELHELKKF
TREK-1	264	IEYLDIFYKPVVWFILVGLAYFAAVLSMIGDWLRVISK
TASK	214	LQTQPQYVAISFVYILTGLTVIGAFNLVVLRFMTMNA
		P1
TWIK-1	277	RKMFYVKKDKD-----
TREK-1	302	KTKEEVGEFR-----
TASK	252	EDEKRDAEHRALLTRNGQAGGGGGGSAHTTDTASSTA
		P2
TWIK-1	288	-----EDQVHIIHDQLSFSSITDQAAGMK--
TREK-1	312	-----AHAAEWTA NVTAEEKETRRLSVEI--
TASK	290	AAGGGGFRNVYA EVLHFQSMCSCLWYKSRREKLQYSIPM
		P1
TWIK-1	313	---EDQKQNEPFFVATQSSACVDGPANH-----
TREK-1	337	---YDKFORATSVKRKLSAELAGNHNQELTPCMRTCL-
TASK	328	IIPRDLSTSDTEVEQSHSSPGGGGRYSDTPSRRCLCSG
		P2
TWIK-1	337	-----
TREK-1	371	-----
TASK	366	APRSAISSVSTGLHSLSTFRGLMKRRSSV

FIG. 9A

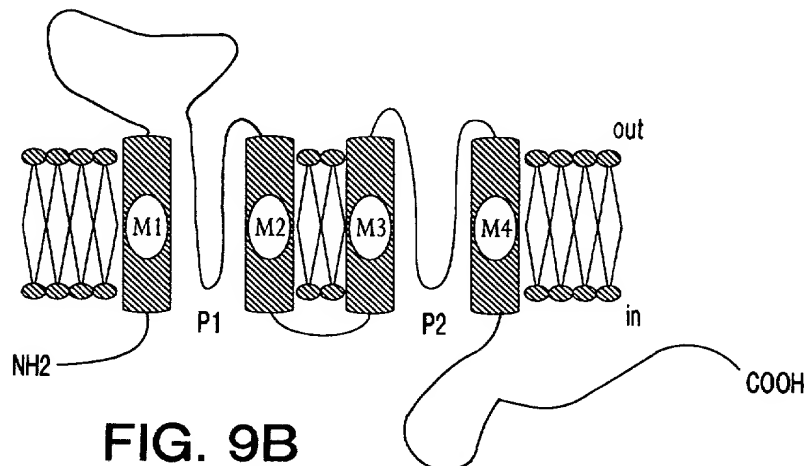


FIG. 9B

1201-CIP-DIV-00

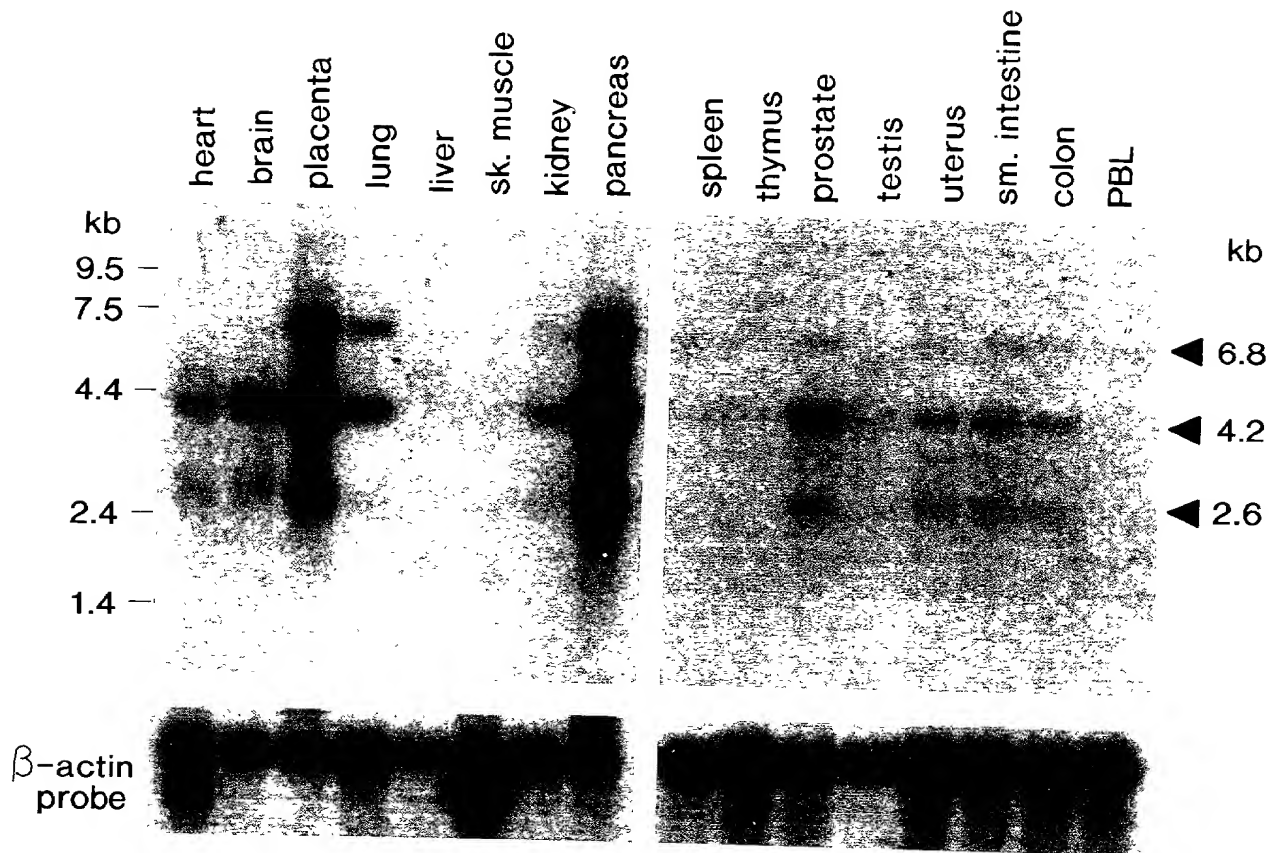


FIG. 10

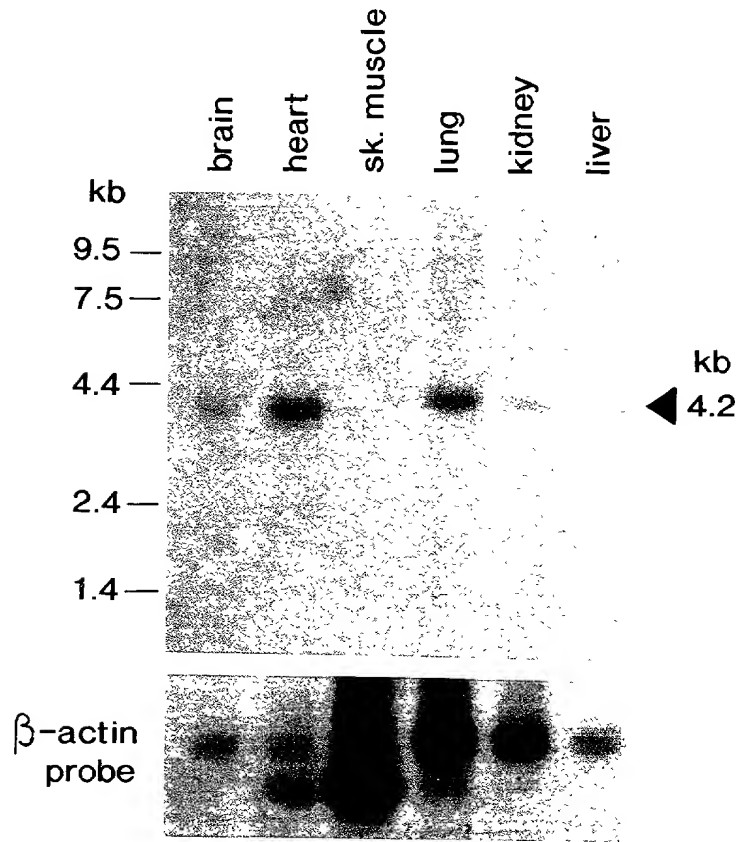


FIG. 11A

FIG. 11B

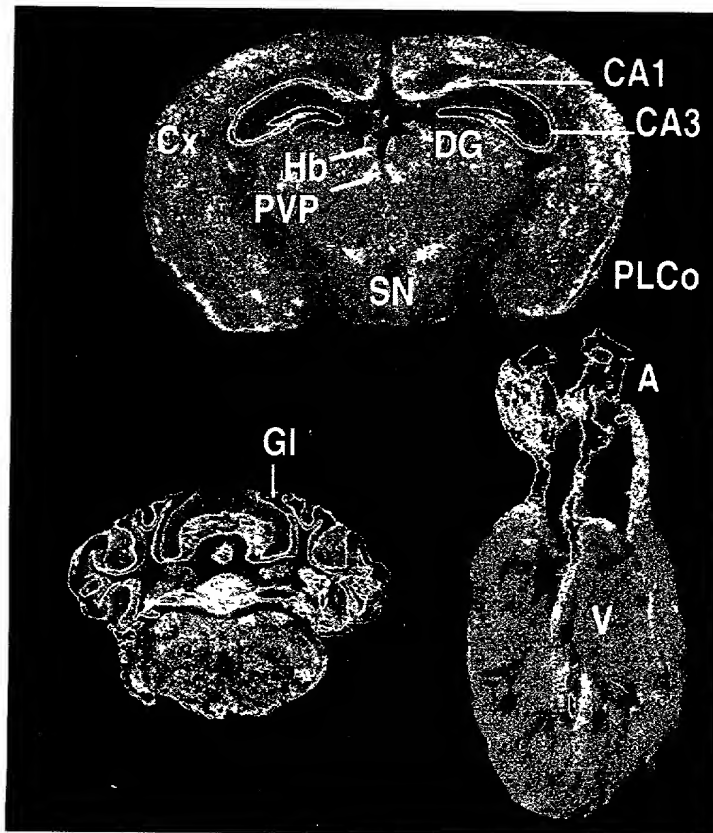


FIG. 11C

FIG. 11D



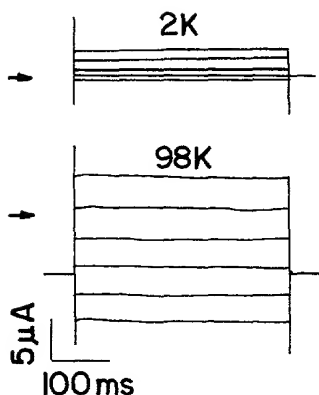


FIG. 12A

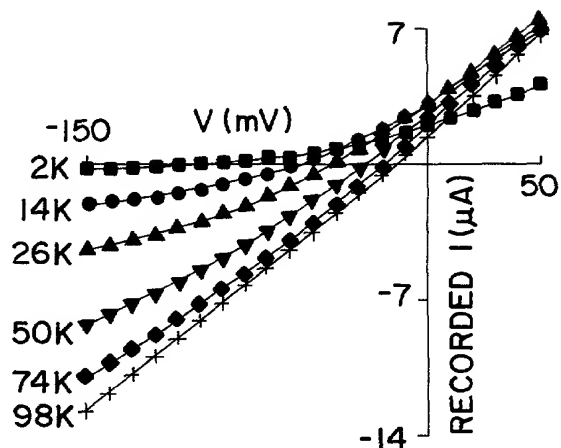


FIG. 12B

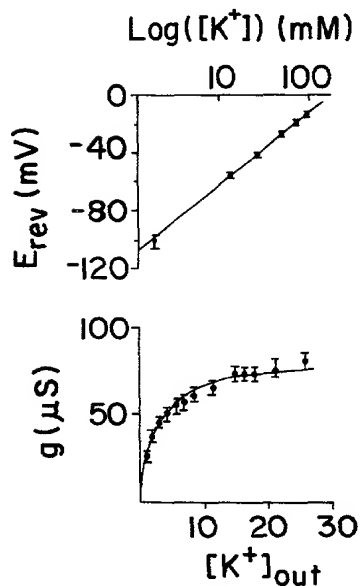


FIG. 12C

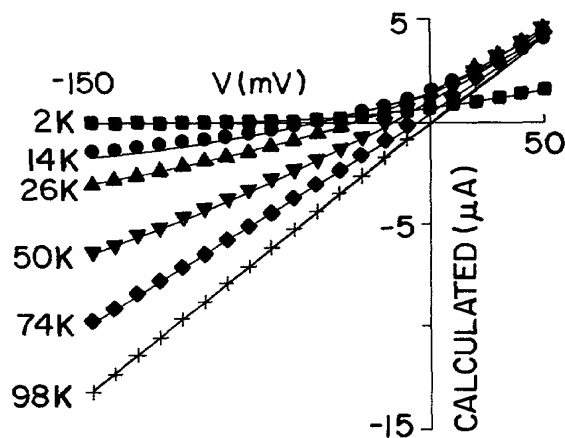


FIG. 12D

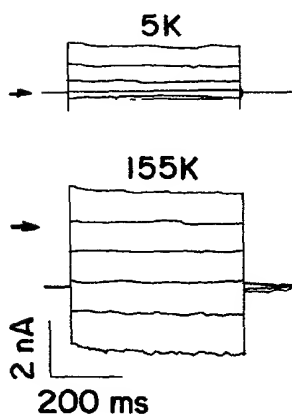


FIG. 12E

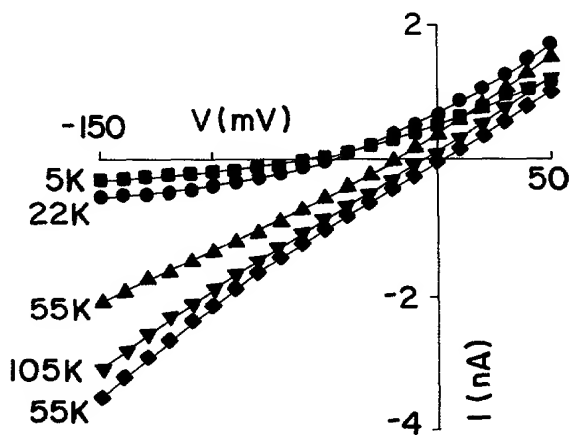


FIG. 12F

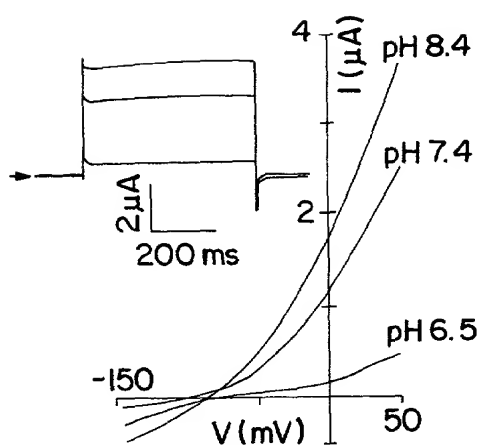


FIG. 13A

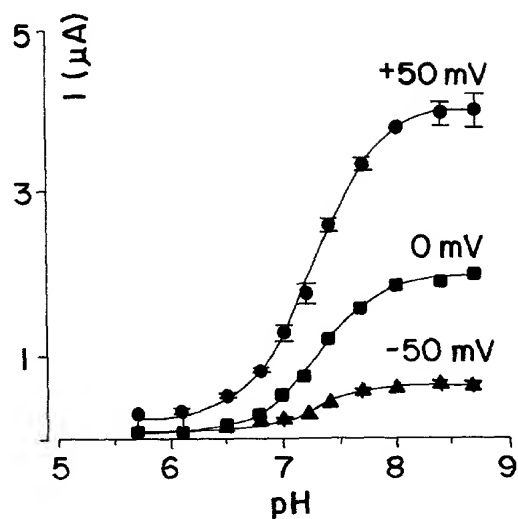


FIG. 13B

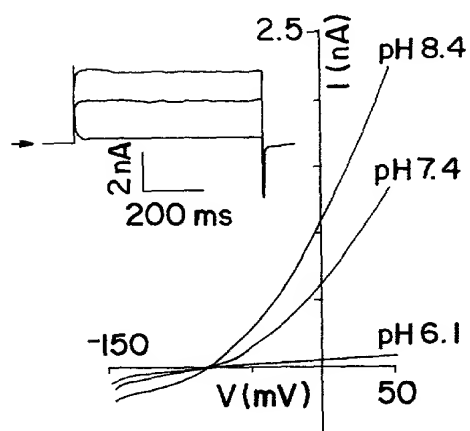


FIG. 13C

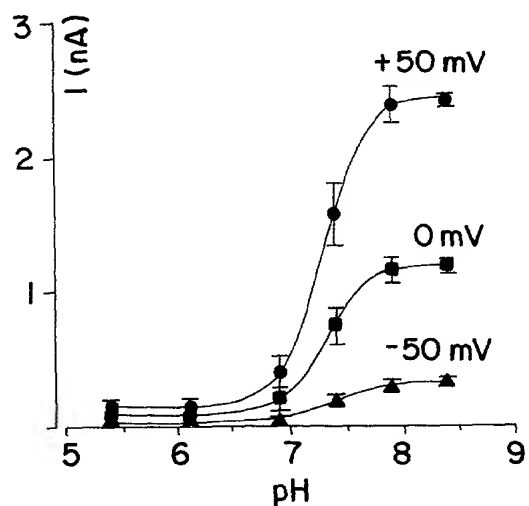


FIG. 13D